

Amendments to the Specification

Please substitute original paragraph [129] with the amended paragraph below. No new subject matter is added by this amendment, which corrects a typographical error, i.e. the reference to “step 1961” in paragraph [129] is corrected to be identified as “step 2161.” Support for this amendment can be found at Figure 21 as originally filed.

[129] External system 100 keeps track of seizure severity measures such as intensity, duration, and electrographic spread using measures of central tendency or other suitable measures and ranks all detections as a function of intensity, duration, etc, and also as a function of the temporal evolution of these variables “within a detection cluster” and “between detection clusters”. External system 100 also sorts seizures according to time of day, day of week, week of month, month of year and also year, using the same variables described above and also according to their temporal evolution within and between clusters. Using these data, external system 100 creates another rank to track circadian, ultradian and other rhythms and features. If any detection severity measure exceeds a certain level, but remains below another level, e.g., the 99 %tile, one or more therapeutic parameters are increased, by a predetermined amount that may vary intra-individually (according to the subjects seizure statistics) and inter-individually. The number and sequence in which parameters would be increased is also prespecified intra- and inter-individually. If the pre-specified type of and sequence of parameter changes are not efficacious, search methods, e.g., a random search method, may be used to select more efficacious therapy parameter values, the number of therapy parameters increased at one given time and the order in which they are increased. External system 100 is programmed not to accept stimulation parameter values that exceed a pre-specified current density or the toleration limits as determined in step 1961 2161.